CLAIMS

What is claimed is:

1. A method of controlling a power supply, having a power switching unit, in an electronic machine using a host connected to the electronic machine, the method comprising:

transmitting received alternating current (AC) power to the power switching unit and simultaneously transforming the AC power into direct current (DC) power;

determining whether the host requests provision of the DC power to the electronic machine; and

driving the power switching unit using the AC power when in response to determining that provision of the DC power to the electronic machine is requested.

2. An apparatus for controlling a power supply, having a power switching unit, in an electronic machine using a host connected to the electronic machine, the apparatus comprising:

a power rectification unit transforming received alternating current (AC) power into direct current (DC) power and smoothing the DC power;

a power switching unit, driven by the AC power, that is switched on or off to control provision of the DC power to the electronic machine when the host requests provision of DC power to the electronic machine;

an AC power connection unit receiving the AC power and outputting the AC power to the power switching unit; and

a power supply control unit controlling the operation of the power switching unit, regardless of whether power is supplied from the power supply of the electronic machine.

3. The apparatus of claim 2, wherein the power rectification unit comprises an electrolytic capacitor that smoothes rectified power and has a discharge line that is open to prevent discharge of charges stored in the electrolytic capacitor.

4. The apparatus of claim 2, wherein the power supply control unit is driven by power received from the host.

5. The apparatus of claim 2, wherein the AC power connection unit comprises:

a first node connected to an AC power supply source;

a second node connected to the power switching unit; and

a resistor between the first node and the second node,

wherein the AC power connection unit receives the AC power from the AC power supply source via the first node and transmits the AC power via the resistor to the second node.

6. The apparatus of claim 3, wherein the power rectification unit further comprises a diode receiving the AC power from the AC power supply source via the first node and rectifying the AC power, the electrolytic capacitor receiving the rectified power and outputting smoothed DC power to a transformer, without outputting the smoothed DC power to the power switching unit.

7. The apparatus of claim 4, wherein the power supply control unit transmits a signal to stop operation of the power switching unit when the power supply control unit does not receive a request from the host to provide DC power to the electronic machine within a predetermined period of time.

8. The apparatus of claim 4, wherein the power switching unit comprises a pulse width modulation-integrated circuit (PWM-IC), and when the power switching unit receives non-rectified AC power without receiving a signal from the power supply control unit to control the power switching unit, no power is provided to the PWM-IC and rectified DC power is not supplied to the electronic machine.

9. The method of claim 1, further comprising transmitting a signal to stop operation of the power switching unit when the host has not requested provision of the DC power to the electronic machine within a predetermined period of time.

10. A circuit for controlling a power supply, having a power switching circuit, in an electronic machine using a host connected to the electronic machine, the circuit comprising:

a power rectification circuit transforming received alternating current (AC) power into direct current (DC) power and smoothing the DC power;

a power switching circuit, driven by the AC power, that is switched on or off to control provision of the DC power to the electronic machine when the host requests provision of DC power to the electronic machine;

an AC power connection circuit receiving the AC power and outputting the AC power to the power switching circuit; and

a power supply control circuit controlling the operation of the power switching circuit, regardless of whether power is supplied from the power supply of the electronic machine.

11. The circuit of claim 10, wherein the power rectification circuit comprises an electrolytic capacitor that smoothes rectified power and has a discharge line that is open to prevent discharge of charges stored in the electrolytic capacitor.

12. The circuit of claim 11, wherein the power supply control circuit is driven by power received from the host.

13. The circuit of claim 10, wherein the AC power connection circuit comprises:

a first node connected to an AC power supply source;

a second node connected to the power switching circuit; and

a resistor between the first node and the second node,

wherein the AC power connection circuit receives the AC power from the AC power supply source via the first node and transmits the AC power via the resistor to the second node.

14. The circuit of claim 11, wherein the power rectification circuit further comprises a diode receiving the AC power from the AC power supply source via the first node and rectifying the AC power, the electrolytic capacitor receiving the rectified power and outputting smoothed DC power to a transformer, without outputting the smoothed DC power to the power switching circuit.

15. The circuit of claim 12, wherein the power supply control circuit transmits a signal to stop operation of the power switching circuit when the power supply control circuit does not receive a request from the host to provide DC power to the electronic machine within a predetermined period of time.

16. The circuit of claim 12, wherein the power switching circuit comprises a pulse width modulation-integrated circuit (PWM-IC) driven by the AC power, and when the power switching circuit receives non-rectified AC power without receiving a signal from the power supply control circuit to control the power switching circuit, no power is provided to the PWM-IC and rectified DC power is not supplied to the electronic machine.

17. The circuit of claim 16, wherein the discharge line of the electrolytic capacitor has no discharge path, preventing incorrect operation of the electronic machine.

18. A circuit for controlling a power supply, having a power switching circuit, in an electronic machine using a host connected to the electronic machine, the circuit comprising:

a power rectification circuit having an electrolytic capacitor, the power rectification circuit transforming received alternating current (AC) power into direct current (DC) power and smoothing the DC power, and the electrolytic capacitor having a discharge line that is open to prevent discharge of charges stored in the electrolytic capacitor;

a power switching circuit, driven by the AC power, that is switched on or off to control provision of the DC power to the electronic machine when the host requests provision of DC power to the electronic machine;

an AC power connection circuit receiving the AC power and outputting the AC power to the power switching circuit; and

a power supply control circuit controlling the operation of the power switching circuit, regardless of whether power is supplied from the power supply of the electronic machine.